[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2020-1116; Project Identifier AD-2020-00784-E; Amendment 39-21524; AD 2021-09-10]

RIN 2120-AA64

Airworthiness Directives; Pratt & Whitney Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is superseding Airworthiness Directive (AD) 2012-04-15 for all Pratt & Whitney (PW) JT9D-3A, JT9D-7, JT9D-7A, JT9D-7AH, JT9D-7F, JT9D-7H, JT9D-7J, JT9D-7Q, JT9D-7Q3, JT9D-7R4D, JT9D-7R4D1, JT9D-7R4E, JT9D-7R4E1, JT9D-7R4E4, JT9D-7R4G2, JT9D-7R4H1, JT9D-20, JT9D-20J, JT9D-59A, and JT9D-70A (JT9D) model turbofan engines. AD 2012-04-15 required revisions to the Airworthiness Limitations Section (ALS) of the manufacturer's Instructions for Continued Airworthiness (ICA) to include required enhanced inspection of selected critical life-limited parts at each piece-part opportunity. AD 2012-04-15 also required additional revisions to the ALS of the manufacturer's ICA for JT9D model turbofan engines. This AD requires revising the required inspections of selected critical life-limited parts specified in the ALS of the manufacturer's ICA and, for air carriers, to the existing continuous airworthiness air carrier maintenance program (CAMP). The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES:

Examining the AD Docket

You may examine the AD docket at https://www.regulations.gov by searching for and locating Docket No. FAA-2020-1116; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket

contains this final rule, any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Nicholas Paine, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7742; fax: (781) 238-7199; email: nicholas.j.paine@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede AD 2012-04-15, Amendment 39-16971 (77 FR 15939, March 19, 2012), (AD 2012-04-15). AD 2012-04-15 applied to all PW JT9D model turbofan engines. The NPRM published in the *Federal Register* on December 15, 2020 (85 FR 81162). The NPRM was prompted by the need to require enhanced inspection of selected critical life-limited parts of PW JT9D model turbofan engines. Since the FAA issued AD 2012-04-15, PW identified errors in the list of mandatory inspections to add to the ALS. During review of the AD, PW found that AD 2012-04-15 did not include eddy current inspections of the fan hubs. Additionally, PW identified duplicate inspections of the HPT Stage 2 disk tie rod and web cooling holes. In the NPRM, the FAA proposed to require revising the required inspections of selected critical life-limited parts specified in the ALS of the manufacturer's ICA and, for air carriers, to the existing CAMP. The FAA is issuing this AD to address the unsafe condition on these products.

Discussion of Final Airworthiness Directive

Comments

The FAA received comments from two commenters. The commenters were Atlas Air Inc. (Atlas Air) and Boeing Commercial Airplanes (Boeing). The following presents the comments received on the NPRM and the FAA's response to each comment.

Request to Add Missing Figure Label

Atlas Air requested that the FAA add the figure label to paragraph (g), Required Actions, of this AD.

The FAA agrees and notes that a formatting issue resulted in the missing figure label from Figure 1 to paragraph (g) in the NPRM. The FAA expects this formatting issue will be corrected with the publication of this final rule.

Addition of Engine Models to Figure

The FAA determined the need to update Figure 1 to paragraph (g) of this AD to specifically reference PW JT9D-7R4G2, and JT9D-7R4H1 model turbofan engines. AD 2012-04-15 included these engines under "7R4 ALL," however, the FAA inadvertently left these engines out of Figure 1 when identifying the individual engine models in the proposed rule. This revision does not change the number of affected engines that the FAA estimated in the NPRM and imposes no additional burden on operators of U.S. airplanes.

Support for the AD

Boeing expressed support for the AD as written.

Conclusion

The FAA reviewed the relevant data, considered any comments received, and determined that air safety requires adopting the AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products. Except for minor editorial changes and any other changes described previously, this AD is adopted as proposed in the NPRM. None of the changes will increase the economic burden on any operator.

Costs of Compliance

The FAA estimates that this AD affects 27 engines installed on airplanes of U.S. registry. Based on updated information since the publication of AD 2012-04-15, the FAA reduced the estimated number of engines installed on airplanes of U.S. registry from 438 in AD 2012-04-15 to 27 in this final rule.

The FAA estimates the following costs to comply with this AD:

Estimated costs

Action	Labor Cost	Parts Cost	Cost per product	Cost on U.S. operators
Update ALS	1 work-hour x $85 per hour =	$0	$85	$2,295

	$85			

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, Section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

The FAA has determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

(1) Is not a "significant regulatory action" under Executive Order 12866,

(2) Will not affect intrastate aviation in Alaska, and

(3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by:

a. Removing Airworthiness Directive 2012-04-15, Amendment 39-16971 (77 FR 15939, March 19, 2012); and

b. Adding the following new airworthiness directive:

2021-09-10 Pratt & Whitney: Amendment 39-21524; Docket No. FAA-2020-1116; Project Identifier AD-2020-00784-E.

(a) Effective Date

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

This AD replaces AD 2012-04-15, Amendment 39-16971 (77 FR 15939, March 19, 2012).

(c) Applicability

This AD applies to all Pratt & Whitney (PW) JT9D-3A, JT9D-7, JT9D-7A, JT9D-7AH, JT9D-7F, JT9D-7H, JT9D-7J, JT9D-7Q, JT9D-7Q3, JT9D-7R4D, JT9D-7R4D1, JT9D-7R4E, JT9D-7R4E1, JT9D-7R4E4, JT9D-7R4G2, JT9D-7R4H1, JT9D-20, JT9D-20J, JT9D-59A, and JT9D-70A (JT9D) model turbofan engines.

(d) Subject

Joint Aircraft System Component (JASC) Code 7230, Turbine Engine Compressor Section.

(e) Unsafe Condition

This AD was prompted by the need to require enhanced inspection of selected critical life-limited parts of PW JT9D model turbofan engines. The FAA is issuing this AD to prevent the failure of critical life-limited rotating engine parts. The unsafe condition, if not addressed, could result in uncontained part release, damage to the engine, and damage to the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions

Within 30 days after the effective date of this AD, add Figure 1 to paragraph (g) of this AD to the Airworthiness Limitations Section (ALS) of the manufacturer's Instructions for Continued Airworthiness (ICA) and, for air carrier operations, to the existing continuous airworthiness air carrier maintenance program.

Figure 1 to Paragraph (g) – *Mandatory Inspections*

Mandatory Inspections

(1) Inspect the following life-limited parts at each piece-part opportunity in accordance with the instructions provided in the applicable manual provisions:

Engine Model (JT9D-xxx)	Engine Manual Part Number (P/N)	Part Nomenclature	Inspect per Manual Section	Inspection/ Check
3A/7/7A/7AH/7F/7H/7J/20/20J	*646028 (or the equivalent customized versions, 770407 and 770408)	All Fan Hubs	72-31-04	Inspection-03
		All Fan Hubs	72-31-04	Inspection-02
		All HPC Stage 5 – 15 Disks and Rear Compressor Drive Turbine Shafts	72-35-00	Inspection-03
		All HPT Stage 1-2 Disks and Hubs	72-51-00	Inspection-03
		**All HPT Stage 1 Disk Web Cooling Holes	72-51-02	Inspection -06
		All HPT Stage 2 Disk Web Tie rod Holes	72-51-02	Inspection- 05
		All LPT Stage 3 – 6 Disks and Hubs	72-52-00	Inspection-03
59A/70A	754459	All Fan Hubs	72-31-04	Check-00
		All Fan Hubs	72-31-00	Check-00
		All HPC Stage 5 – 15 Disks and Rear Compressor Drive Turbine Shafts	72-35-00	Check-00
		All HPT Stage 1-2 Disks and Hubs	72-51-00	Check-03
		All HPT Stage 1 Disk Web Cooling Holes	72-51-02	Check-03
		**All HPT Stage 2 Disk Tie rod and Web Cooling Holes	72-51-02	Check-04
		All LPT Stage 3 – 6 Disks and Hubs	72-52-00	Check-03

Engine Model (JT9D-xxx)	Engine Manual (P/N)	Part Nomenclature	Inspect per Manual Section	Inspection/ Check
7Q/7Q3	777210	All Fan Hubs	72-31-02	Inspection-02
		All Fan Hubs	72-31-00	Inspection-03
		All HPC Stage 5 – 15 Disks and Rear Compressor Drive Turbine Shafts	72-35-00	Inspection-03
		All HPT Stage 1-2 Disks and Hubs	72-51-00	Inspection-03 Inspection-03
		All HPT Stage 1 Disk Web Cooling Holes	72-51-06	
		**All HPT Stage 2 Disk Tie rod and Web Cooling Holes	72-51-07	Inspection-03
		All LPT Stage 3 – 6 Disks and Hubs	72-52-00	Inspection-03
7R4D/7R4D1/7R4E/7R4E1/7R4E4/7R4G2/7R4H1	785058, 785059, and 789328	All Fan Hubs	72-31-00	Inspection/Check-03
		**All Fan Hub Slots	72-31-01	Inspection/Check-02
		All HPC Stage 5 – 15 Disks and Rear Compressor Drive Turbine Shafts	72-35-00	Inspection/Check 03
		All HPT Stage 1-2 Disks and Hubs	72-51-00	Inspection/Check 03
		All LPT Stage 3 – 6 Disks and Hubs	72-52-00	Inspection/Check 03
		**All HPT Stage 2 Disk Tie rod and Web Cooling Holes	72-51-07	Inspection/Check-02
7R4D/7R4D1/7R4E/7R4E1	785058 and 785059	All HPT Stage 1 Disk Web Cooling Holes	72-51-06	Inspection/Check-02

* P/N 770407 and 770408 are customized versions of P/N 646028 engine manual.
** Two asterisks identify the part nomenclatures and inspections added to the table.

(2) For the purposes of these mandatory inspections, piece-part opportunity means:

(i) The part is considered completely disassembled when disassembly is in accordance with the disassembly instructions in the manufacturer's engine shop manual; and

(ii) The part has accumulated more than 100 cycles-in-service since the last piece-part opportunity inspection, provided that the part was not damaged or related to the cause for its removal from the engine.

(h) Alternative Methods of Compliance (AMOCs)

(1) The Manager, ECO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in Related Information. You may email your request to: ANE-AD-AMOC@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(i) Related Information

For more information about this AD, contact Nicholas Paine, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7742; fax: (781) 238-7199; email: nicholas.j.paine@faa.gov.

(j) Material Incorporated by Reference

None.

Issued on April 16, 2021.

Lance T. Gant, Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.

[FR Doc. 2021-08327 Filed: 4/21/2021 8:45 am; Publication Date: 4/22/2021]